Physik-Kolloquium

Dienstag, den 14.06.2011, 17:00 Uhr

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Intracellular pattern generation - mechanics meets biochemistry

I will present recent advances in our understanding of the coupling of mechanical and biochemical processes for the purpose of forming intracellular patterns. I will begin by discussing in general terms the mechanism of pattern formation in active fluids in which active stress is regulated by diffusing molecular components. I will then discuss a particular biological example, which is the polarization of the C. elegans zygote, a classic example for mechanocchemical coupling. I illustrate how passive advection by actively generated fluid flow is sufficient to drive asymmetry in PAR proteins and thereby acts as a trigger for pattern formation. Our work suggests that passive advective transport in a regulated active material is a general mechanism by which patterns are established in developmental biology.

Ort: Hörsaal für Theoretische Physik, Linnéstraße 5
Alle Teilnehmer sind ab 16:30 Uhr zu Kaffee vor dem Hörsaal eingeladen.